

This listing of claims will replace all prior versions, and listings, of claims in the application:

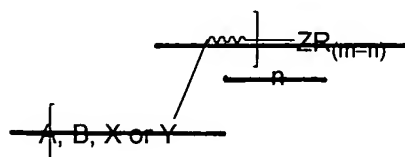
**Listing of Claims:**

1. (Original): A polymer composition for use at least in surface coating applications and in fabrication of rigid foams with load bearing capacity comprising a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, the first of said at least two functionalities of said base molecule enabling a first curing stage of said polymer composition by reaction with the functionality of said linker molecule, and the second and any further functionality of said base molecule enabling second and optionally further curing stages of said polymer composition, said first, second and any further curing stages being capable of activation simultaneously or independently of each other as required.
2. (Original): A polymer composition as claimed in Claim 1 which is biodegradable.
3. (Original): A polymer composition as claimed in Claim 1 which is biostable.
4. (Currently amended): The ~~[[A]]~~ polymer composition ~~as claimed in any one of Claim 1 Claims 1-3~~ wherein the base molecule and the linker molecule are, independently of each other, a single organic molecule.
5. (Currently amended): The ~~[[A]]~~ polymer composition ~~as claimed in any one of Claim 1 Claims 1-3~~ wherein the base molecule and the linker molecule are, independently of each other, an oligomer formed from two or more substrate monomers.

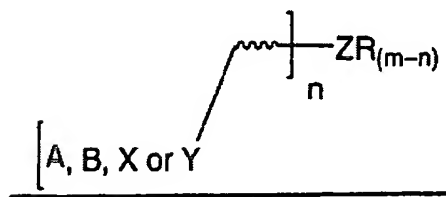
6. (Currently amended): The  $[[A]]$  polymer composition of as claimed in Claim 5 wherein the base molecule and linker molecule independently of each other, have a molecular weight of less than 2000, ~~preferably less than 1000 and more preferably less than 500.~~

7. (Currently amended): The  $[[A]]$  polymer composition ~~as claimed in any one of Claim 1 Claims 1-6~~ wherein the base molecule is of the formula 1:

(a)



~~$n = 1 \text{ to } m$~~   
 ~~$m = \text{valency of } Z$~~   
~~I~~



$n = 1 \text{ to } m$   
 $m = \text{valency of } Z$

I

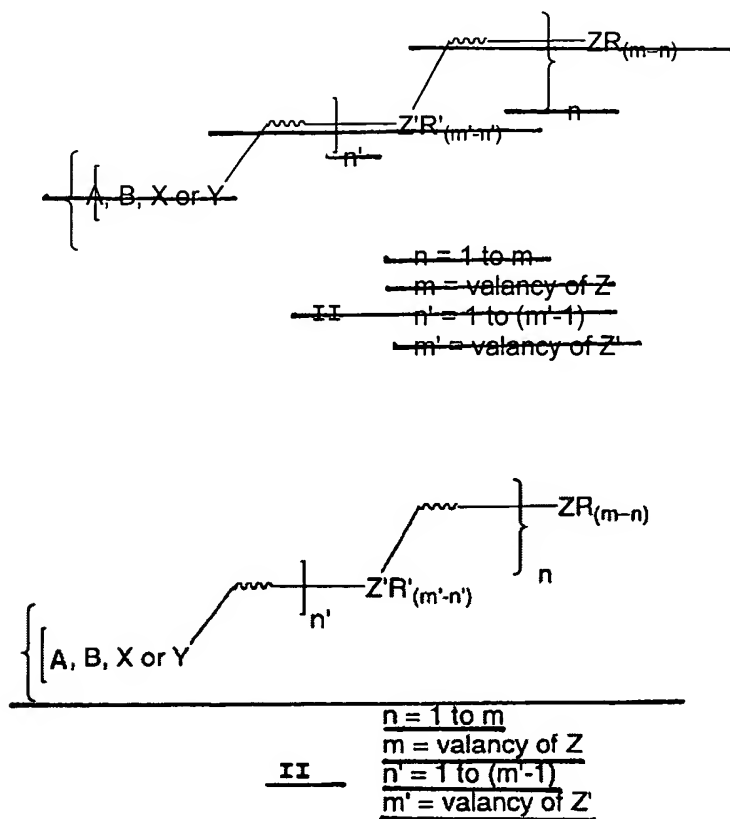
wherein:

^^ is one or more repeating units, N & M, are integers, A and B are unsaturated moieties, Z is H, C, O, N, Si or S and the remaining variables are defined as follows:

| Atom (Z) | Valancy (m) | n (arms) | R                                                        | ZR(m-n)                                                                                                                      |
|----------|-------------|----------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| C        | 4           | 1        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH <sub>3</sub> , C(CH <sub>3</sub> ) <sub>3</sub> , C(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> , C(OR) <sub>3</sub>     |
|          |             | 2        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH <sub>2</sub> , C(CH <sub>3</sub> ) <sub>2</sub> , C(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , C(OR) <sub>2</sub>     |
|          |             | 3        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH, C(CH <sub>3</sub> ), C(C <sub>2</sub> H <sub>5</sub> ), C(OR)                                                            |
|          |             | 4        | none                                                     | C (4 arms)                                                                                                                   |
| O        | 2           | 1        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | OH, O(CH <sub>3</sub> ), O(C <sub>2</sub> H <sub>5</sub> ), R cannot be OR                                                   |
|          |             | 2        | none                                                     | O                                                                                                                            |
| Si       | 4           | 1        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH <sub>3</sub> , Si(CH <sub>3</sub> ) <sub>3</sub> , Si(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> , Si(OR) <sub>3</sub> |
|          |             | 2        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH <sub>2</sub> , Si(CH <sub>3</sub> ) <sub>2</sub> , Si(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , Si(OR) <sub>2</sub> |
|          |             | 3        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH, Si(CH <sub>3</sub> ), Si(C <sub>2</sub> H <sub>5</sub> ), Si(OR)                                                        |
|          |             | 4        | none                                                     | Si (4 arms)                                                                                                                  |
| H        | 1           | 1        | none                                                     | H (R=0)                                                                                                                      |

8. Currently amended): The [[A]] polymer composition ~~as claimed in any one~~ of Claim 1 ~~claims 1-6~~ wherein the base molecule is of the formula II:

(b)



wherein:

$\sim$  is one or more repeating units,  $N$ ,  $M$ ,  $N^1$  and  $M^1$  are integers,  $A$  and  $B$  are unsaturated moieties,  $Z$  is H, C, O, N, Si, S and  $Z^1$  is H, C, O, N, Si, S and the remaining variables are defined as follows:

| Atom<br>(Z) | Valancy<br>(m) | n<br>(arms) | R                                                        | ZR <sub>(m-n)</sub>                                                                                                      |
|-------------|----------------|-------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| C           | 4              | 1           | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH <sub>3</sub> , C(CH <sub>3</sub> ) <sub>3</sub> , C(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> , C(OR) <sub>3</sub> |
|             |                | 2           | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH <sub>2</sub> , C(CH <sub>3</sub> ) <sub>2</sub> , C(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , C(OR) <sub>2</sub> |
|             |                | 3           | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH, C(CH <sub>3</sub> ), C(C <sub>2</sub> H <sub>5</sub> ), C(OR)                                                        |

| Atom (Z) | Valancy (m) | n (arms) | R                                                        | ZR(m-n)                                                                                                                      |
|----------|-------------|----------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
|          |             | 4        | none                                                     | C (4 arms)                                                                                                                   |
| O        | 2           | 1        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | OH, O(CH <sub>3</sub> ), O(C <sub>2</sub> H <sub>5</sub> ), R cannot be OR                                                   |
|          |             | 2        | none                                                     | O                                                                                                                            |
| Si       | 4           | 1        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH <sub>3</sub> , Si(CH <sub>3</sub> ) <sub>3</sub> , Si(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> , Si(OR) <sub>3</sub> |
|          |             | 2        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH <sub>2</sub> , Si(CH <sub>3</sub> ) <sub>2</sub> , Si(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , Si(OR) <sub>2</sub> |
|          |             | 3        | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH, Si(CH <sub>3</sub> ), Si(C <sub>2</sub> H <sub>5</sub> ), Si(OR)                                                        |
|          |             | 4        | none                                                     | Si (4 arms)                                                                                                                  |
| H        | 1           | 1        | none                                                     | H (R=0)                                                                                                                      |

| Atom (Z') | Valancy (m') | n' (arms) | R'                                                       | Z'R'(m'-n')                                                                                                                  |
|-----------|--------------|-----------|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| C         | 4            | 1         | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH <sub>2</sub> , C(CH <sub>3</sub> ) <sub>2</sub> , C(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , C(OR) <sub>2</sub>     |
|           |              | 2         | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | CH, C(CH <sub>3</sub> ), C(C <sub>2</sub> H <sub>5</sub> ), C(OR)                                                            |
|           |              | 3         | none                                                     | C (4 arms)                                                                                                                   |
| O         | 2            | 1         | none                                                     | O                                                                                                                            |
| Si        | 4            | 1         | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH <sub>2</sub> , Si(CH <sub>3</sub> ) <sub>2</sub> , Si(C <sub>2</sub> H <sub>5</sub> ) <sub>2</sub> , Si(OR) <sub>2</sub> |
|           |              | 2         | H, CH <sub>3</sub> , C <sub>2</sub> H <sub>5</sub> or OR | SiH, Si(CH <sub>3</sub> ), Si(C <sub>2</sub> H <sub>5</sub> ), Si(OR)                                                        |
|           |              | 3         | none                                                     | Si (4 arms)                                                                                                                  |
| H         | 1            | 0         | cannot have a group or atom                              |                                                                                                                              |

9. (Currently amended): The [[A]] polymer composition as ~~claimed in any one of Claim 1 Claims 1-8~~ additionally comprising one or more of the group consisting of radical inhibitor, sensitizer, promoter, dispersant, porogen, catalyst, pigment and surfactant.

10. (Original): A prepolymer composition for use at least in surface coating and adhesive applications and in the fabrication of rigid foams with load bearing capacity,

comprising the reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said reaction product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule to form said prepolymer composition.

11. (Original): A cured polymeric end product for use at least in surface coating and adhesive applications and in the fabrication of rigid foams with load bearing capacity, comprising the reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said end product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule and a second curing stage and optionally further curing stages wherein said initiator compound is activated to affect free radical polymerisation of at least said second functionality of said base molecule.

12. (Currently amended): A method comprising: Use of a polymer composition according to any of Claims 1-9, a prepolymer composition according to Claim 10 or cured end product according to Claim 11 in the preparation of preparing a surface coating comprising one of:

a) a polymer composition comprising a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, the first of said at least two functionalities of said base molecule enabling a first curing stage of said polymer composition by reaction with the functionality of said linker molecule, and the second and any further functionality of said base molecule enabling second and optionally further curing stages of said polymer

composition, said first, second and any further curing stages being capable of activation simultaneously or independently of each other as required;

b) a prepolymer composition comprising a reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said reaction product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule to form said prepolymer composition; or

c) a cured polymeric end product, comprising the reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said end product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule and a second curing stage and optionally further curing stages wherein said initiator compound is activated to affect free radical polymerisation of at least said second functionality of said base molecule.

13. (Currently amended): A method comprising: Use of a polymer composition according to any of Claims 1-9, a prepolymer composition according to Claim 10 or cured end product according to Claim 11 in the preparation of preparing a rigid foam with load bearing capacity comprising one of:

a) a polymer composition comprising a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, the first of said at least two functionalities of said base molecule enabling a first curing stage of said polymer composition by reaction with the functionality of said linker

molecule, and the second and any further functionality of said base molecule enabling second and optionally further curing stages of said polymer composition, said first, second and any further curing stages being capable of activation simultaneously or independently of each other as required;

b) a prepolymer composition comprising a reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said reaction product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule to form said prepolymer composition; or

c) a cured polymeric end product, comprising the reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said end product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule and a second curing stage and optionally further curing stages wherein said initiator compound is activated to affect free radical polymerisation of at least said second functionality of said base molecule.

14. (Currently amended): A method comprising: ~~Use of a polymer composition according to any one of Claims 1-9, a prepolymer composition according to Claim 10 or cured end product according to Claim 11 in the preparation of~~ preparing an adhesive composition comprising one of:

a) a polymer composition comprising a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, the first of said at least



two functionalities of said base molecule enabling a first curing stage of said polymer composition by reaction with the functionality of said linker molecule, and the second and any further functionality of said base molecule enabling second and optionally further curing stages of said polymer composition, said first, second and any further curing stages being capable of activation simultaneously or independently of each other as required;

b) a prepolymer composition comprising a reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said reaction product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule to form said prepolymer composition; or

c) a cured polymeric end product, comprising the reaction product of a base molecule, a linker molecule and at least one initiator compound, said base molecule having at least two differing functionalities, and said linker molecule having a functionality reactive with at least one of said functionalities of said base molecule, said end product being the result of a first curing stage wherein the first of said at least two functionalities of said base molecule reacts with the functionality of said linker molecule and a second curing stage and optionally further curing stages wherein said initiator compound is activated to affect free radical polymerisation of at least said second functionality of said base molecule.

15. (New): The polymer composition of Claim 7 additionally comprising one or more of the group consisting of radical inhibitor, sensitizer, promoter, dispersant, porogen, catalyst, pigment and surfactant.

16. (New) The polymer composition of Claim 8 additionally comprising one or more of the group consisting of radical inhibitor, sensitizer, promoter, dispersant, porogen, catalyst, pigment and surfactant.

17. (New) The polymer composition of Claim 1 wherein the base molecule and linker molecule independently of each other, have a molecular weight of less than 1000.

18. (New) The polymer composition of Claim 1 wherein the base molecule and linker molecule independently of each other, have a molecular weight of less than 500.